

## Gigabit Ethernet over STM-1 Converter



### Product Overview:

Gigabit Ethernet over SDH (STM-1) provides a simple, cost effective and compact solution to convert 10/100/1000Base-T (Gigabit) data interface on the user side and transport Ethernet traffic over a STM-1 (155Mbps) SDH link and reconstruct the data back to ethernet frame format, at remote end. The converter is an effective method for converting and transporting 10/100/1000Base-T (Gigabit) ethernet data over an STM-1 (155Mbps) SDH link. This Gigabit Ethernet over SDH (STM-1) equipment is a modular platform unit with two pluggable 155.52Mbps optical / electrical interfaces, which may be used in a point-to-point application to provide a compact, cost effective and flexible solution to deliver multiple Ethernet channels.

Gigabit Ethernet interface card along with Engineering Order Wire is available. The user removable / replaceable STM-1 Optical / Electrical interface option makes it easy to meet various and changing user requirements. Our Gigabit Ethernet over SDH Transmission Equipment provides full capability to cross-connect at E1 level between all tributaries. The equipment can be used as Terminal Multiplexer (TM) to build a point-to-point SDH transmission network.

The unit is available in a compact 1U (44mm high) box in a 19-inch rack mount chassis.

### Applications:

- 10/100/1000Base-T (Gigabit) Ethernet to STM-1 conversion (100/1000Base-T over an STM-1 [155Mbps] interface)
- WiMAX station connectivity

- High-bandwidth private LAN services
- Enterprise connectivity
- IP DSLAM backhauling
- 3G mobile station connectivity
- Gigabit Ethernet over STM-1 converter - Remote LAN over wireless
- Gigabit Ethernet over STM-1 converter - Remote LAN application

**Features and Highlights:**

- Compact 1U height, 19-Inch standard chassis ideal for rack mounting
- Service interfaces:
  - o 2 x STM-1 optical interfaces, SFP optical module (LC connector)
  - o 2 x STM-1 electrical interfaces, SFP electrical module (Mini BNC connector) (optional)
  - o 2 x Gigabit Ethernet (electric) interface or
  - o 1 x Gigabit Ethernet (optical) interface (optional-extra)
- Management and Maintenance Interfaces
  - o TCP/IP Management Interface for Telnet and SNMP
  - o RS232 Serial Management Interface
  - o SNMP based NMS inbuilt with Windows XP / Windows Vista compatible Graphical User Interface (GUI)
  - o SNMP V2 Management and Monitoring
  - o Engineering Order Wire (EOW) Interface (RJ-11)
- Timing mode Synchronization with STM-1 line timing
  - o Looptimed from received STM-1 / External E1 / External Clock (2MBPS/2MHz)
  - o External timing source option - 120 Ohms 2MBps (External Bits Clock)
  - o External timing source - 120 Ohms 2MHz (External TTL Clock)
  - o Internal Clock - ITU-T G.813 internal oscillator
  - o The timing source can be auto-switched according to default or operator programmed settings
- 1 or 2 external Ethernet LAN ports and 4 internal Ethernet WAN ports
- Each WAN port employs a VCG channel
- Up to 48 VC12 bandwidth for each VCG and the total bandwidth is 63 VC12 assigned for 4 VCGs
- Provide two Gigabit Ethernet electrical interface or one Gigabit Ethernet optical interface as LAN interface (customer may use either 2 Gigabit electrical interfaces or 1 Gigabit optical interface, at any time)
- Ethernet electrical interface (RJ45 connector) supports 10/100/1000Base Tx with 10/100/1000Mb/s full duplex auto-negotiation data rate. User-configurable, with auto-negotiation support or forced mode.
- Ethernet Optical interface (SFP module) supports 1000Mb/s and automatic Laser Shutdown (ALS) function
- Supports 802.3/802.3u frame type and Ethernet II frame type

- Supports flow control and broadcast storm filtering control 802.3x
- Supports MAC address dynamic learning function
- Supports port-based VLAN and 802.1Q tag VLAN and 802.1p transparent.
- Supports GFP-F Encapsulation specification complying with ITU-T G.7041
- Supports VCAT specification complying with ITU-T G.707 and LCAS proposed in G.7042
- The maximum tolerated differential delay between any two VC-12 channels is 128 ms
- Provides both LCAS and Non-LCAS modes
- Supports automatic protection switching based on VC-12, in a ring network
- Supports device management based on CLI command and network management based on SNMP protocol
- Filtering and forwarding: 150,000 frames per second
- Buffer capacity: 210 frames
- Minimum Frame Size : 64 bytes
- Maximum Frame Size : 1536 bytes
  
- Analysis and monitoring
  - o Supports device management based on CLI command and network management based on SNMP protocol
  - o Supports performance monitoring based on MSOH (B2 byte counting)
  - o Remote Detect Indication (RDI) Alarm
  - o Alarm Indication Signal (AIS) Alarm
  - o Multiplex Section Overhead AIS (MSOH AIS)
  - o SDH Frame Signal (SFS) Alarm, etc
  
- LED indicators
  - o Power
  - o LOS STM-1 interface
  - o Unit Status
  - o Unit Alarm
  - o Ethernet Link
  - o Ethernet speed
  - o Ethernet activity
  
- Alarm Relay
  - o Dry contact 9-pin D-Type female connector
  - o Normally open and/or normally close configuration
  
- Easy to operate
  
- Mechanical Specifications
  - o Rack Mounting: Standard 19". Din Rack
  - o Height: 44 mm
  - o Width: 440 mm
  - o Depth: 256 mm
  - o Weight 3.25 kg
  
- Environment
  - o Temperature: 0–55°C (32–122°F)

- o Humidity: Up to 90%, non-condensing
- Power Supply
  - o AC: 100 to 240 VAC ( $\pm 10\%$ ), 50 to 60 Hz, <10-12 W
  - o DC: -36 VDC to -75VDC, <10-12 W
  - o 1+1 (AC+DC, AC+AC and DC+DC) Protection supported

### Typical Application:

